Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) Interface link layer device ~~(1)~~ connected to a first data bus ~~(2)~~ and via a transmission path ~~(3)~~ to at least one other interface link layer device ~~(4)~~ that is connected to a respective second data bus ~~(5)~~ of a plurality of second data busses, comprising: ~~characterized by~~

- uplink means to accept a data packet from the first data bus ~~(2)~~ that has a predetermined destination or that has a channel number of a data channel that leads from the first data bus ~~(2)~~ to one of said ~~the~~ respective second data bus ~~busses (5)~~ and to transmit it via said transmission path ~~(3)~~ to said other interface link layer device ~~(4)~~ serving said predetermined destination; and

- downlink means to output data packets received via said transmission path ~~(3)~~ from one of said at least one other interface link layer devices ~~(4)~~ to a predetermined destination on the first data bus ~~(2)~~.

2. (Currently Amended) Interface link layer device according to claim 1, ~~characterized in that~~

wherein said uplink means comprise a first register ~~(12)~~ that reflects destination identifiers which will be accepted.

3. (Currently Amended) Interface link layer device according to claim 2, ~~characterized in that~~

wherein said destination identifier is a bus identifier of said respective second data bus ~~(5)~~ and said first register ~~(12)~~ comprises a bus enable register identifying said respective second data bus ~~(5)~~ that is serving said predetermined destinations.

4. (Currently Amended) Interface link layer device according to claim 2, ~~characterized in that~~

wherein said destination identifier is a node identifier and said first register comprises

- a node enable register identifying at least one predetermined destination.

5. (Currently Amended) Interface link layer device according to claim 1, ~~characterized in that it sets up~~ wherein said interface link layer device sets up a direct connection to each one of:

said at least one other interface link layer devices ~~(4)~~ and

said uplink means comprise a fourth register ~~(17)~~ that includes a destination identifier of each one of said at least one other interface link layer devices ~~(4)~~.

6. (Currently Amended) Interface link layer device according to claim 5, ~~characterized in that it~~

wherein said interface link layer device is able to route data packets to another interface link layer device ~~(4)~~ it has a direct connection with.

7. (Currently Amended) Interface link layer device according to claim 5, ~~characterized in that~~

wherein said uplink means comprise a third register ~~(14)~~ that stores an available bandwidth of a connection to another interface link layer device ~~(4)~~ it has a direct connection with.

8. (Currently Amended) Interface link layer device according to claim 1, ~~characterized in that~~

wherein said uplink means comprise a second register ~~(15)~~ that reflects all respective channel numbers of a data channels which will be accepted that carry data packets from one source node of the first data bus ~~(2)~~ to another destination node of one of the plurality of second data busses ~~(5)~~ via said interface link layer device ~~(1)~~.

9. (Currently Amended) Interface link layer device according to claim 8, ~~characterized in that~~

wherein said second register ~~(15)~~ stores an identifier of said source node and/or said destination node.

10. (Currently Amended) Interface link layer device according to claim 8, ~~characterized in that~~

wherein said second register stores the speed of said data channel.

11. (Currently Amended) Interface link layer device according to claim 8, ~~characterized in that~~

wherein said second register stores the payload of said data channel.

12. (Currently Amended) Interface link layer device according to claim 1, ~~characterized by~~ further comprising:

an acknowledge code generator ~~(18)~~ that generates an acknowledgement to be send to the originator of a data packet accepted from the data bus ~~(2)~~ it is connected to and transmitted via said transmission path ~~(3)~~ to a predetermined destination different to itself.

13. (Currently Amended) Interface link layer device according to claim 12, ~~characterized in that~~

wherein said acknowledgement indicates a pending action in case data packet is forwarded to another predetermined destination.

14. (Currently Amended) Interface link layer device according to claim 12, ~~characterized in that~~

wherein said acknowledgement indicates a completed action in case a data packet was forwarded to another predetermined destination and said other destination returns a response packet without any errors.

15. (Currently Amended) Interface link layer device according to claim 12, ~~characterized in that~~

wherein said acknowledgement indicates an error in case of a data reception error.

16. (Currently Amended) Interface link layer device according to claim 1, ~~characterized~~

~~by~~ further comprising:

a response packet generator ~~(19)~~ that generates a response to be send via the transmission path ~~(3)~~ to the destination of an acknowledge code received via said first data bus ~~(2)~~.

17. (Currently Amended) Interface link layer device according to claim 16, ~~characterized in that~~

wherein said response indicates a completed action in case a completed action acknowledge code is received.

18. (Currently Amended) Interface link layer device according to claim 16, ~~characterized in that~~

wherein no response is ~~send~~ sent in case a pending action acknowledge code is received.

19. (Currently Amended) Interface link layer device according to claim 16, ~~characterized in that~~

wherein said response indicates a busy destination in case a busy acknowledge code is received.

20. (Currently Amended) Interface link layer device according to claim 16, ~~characterized in that~~

wherein said response indicates a data error in case a data error acknowledge code is received.

21. (Currently Amended) Interface link layer device according to claim 16, ~~characterized in that~~

wherein said response indicates a type error in case a type error acknowledge code is received.

22. (Currently Amended) Interface link layer device according to claim 16, ~~characterized in that~~

wherein said response packet generator ~~(19)~~ monitors the request packets output to the first data bus ~~(2)~~ to generate the response packet.

23. (Currently Amended) Interface link layer device according to claim 1, ~~characterized in that~~

wherein said downlink means comprises a channel number assignment unit ~~(21)~~ that assigns an appropriate channel number to a data packet received via said transmission path ~~(3)~~ that gets forwarded on the first data bus ~~(2)~~ on a channel different to the channel the data packet has left its source on the respective second data bus ~~(5)~~.

24. (Currently Amended) Interface link layer device according to claim 1, ~~characterized in that~~

wherein said uplink means comprises a packetizer ~~(13)~~ that is able to repack data packets received from the first data bus ~~(2)~~ into a format of the transmission path ~~(3)~~ that is different to the format of the first data bus ~~(2)~~.

25. (Currently Amended) Interface link layer device according to claim 1, ~~characterized in that~~

wherein said downlink means comprises a packet separator ~~(20)~~ that is able to repack data packets received from the transmission path ~~(3)~~ into a format of the first data bus ~~(2)~~ that is different to the format of the transmission path ~~(3)~~.

26. (Currently Amended) Interface link layer device according to claim 1, ~~characterized in that~~

wherein said transmission via said transmission path ~~(3)~~ from or to said other interface link layer device ~~(4, 8)~~ is performed directly or via one or more other link layer devices ~~(4, 8)~~.

27. (Currently Amended) Interface link layer device according to claim 1, ~~characterized by~~ further comprising:

a controllable switch ~~(16a, 16b)~~ to route predetermined data packets received on a data channel of the transmission path ~~(3)~~ via another data channel of the transmission path ~~(3)~~ to another interface link layer device ~~(4, 8)~~.

28. (Currently Amended) Interface link layer device according to claim 1, ~~characterized in that it~~

wherein said interface link layer device forwards data packets from said first data bus ~~(2)~~ with a destination of the interface link layer device ~~(1)~~ via said transmission path ~~(3)~~ to another interface link layer device ~~(4; 4A, 4B)~~ which is connected to one of said plurality of second data busses ~~(5; 5A, 5B)~~ serving only one further destination.

29. (Currently Amended) Interface link layer device according to claim 1, ~~characterized in that~~ it

wherein said interface link layer device forwards all data packets from said first data bus ~~(2)~~ serving only one predetermined destination via said transmission path ~~(3)~~ to another interface link layer device ~~(4; 4A, 4B)~~ which is connected to one of saidsecond data busses ~~(5; 5A, 5B)~~.

30. (Currently Amended) Interface link layer device according to claim 1, ~~characterized in that~~ it

wherein said interface link layer device translates a destination of a data packet directed to an interface link layer device into a predetermined other destination which is the only further destination on the respective data bus connected to said other destination and/or it translates a predetermined source of a data packet directed to a predetermined destination into a source of an interface link layer device.

31. (Currently Amended) Interface link layer device according to claim 1, ~~characterized in that~~

wherein said data bus is an IEEE 1394 bus.

32. (Currently Amended) Interface link layer device according to claim 1, ~~characterized in that~~

wherein said data packets are isochronous and/or ~~asynchonous~~ asynchronous data packets.

33. (Currently Amended) Interface link layer device according to claim 1, ~~characterized in that~~

wherein said transmission path ~~(3)~~ is build by a cable, in particular a coaxial cable, a light guide and/or a radio connection.

34-36. (Canceled)

37. (New) Method to deliver data packets within a distributed network, said distributed network comprising an interface link layer device connected to a first data bus and via a transmission path to at least one other interface link layer device that is connected to a respective second data bus of a plurality of second data busses, said method comprising the steps of:

accepting, by means of uplink means, a data packet from the first data bus that has a predetermined destination or that has a channel number of a data channel that leads from the first data bus to one of said second data busses;

transmitting said data packet, by means of said uplink means, via said transmission path to said other interface link layer device serving said predetermined destination; and

outputting, by means of downlink means, data packets received via said transmission path from one of said at least one other interface link layer device to a predetermined destination on the first data bus.

38. (New) The method of claim 37, wherein said data packets are only delivered into such parts of the distributed network that comprise their at least one receiver.

39. (New) A portal for interfacing a first data bus to a data interface, comprising:

uplink means configured and adapted for receiving data packets from said data bus, determining a destination of each of said data packets and transmitting only those of said received data packets onto said data interface that are destined for a node of a second data bus that can be reached via said data interface.

40. (New) The portal of claim 39, wherein said data packets are asynchronous data packets.

41. (New) The portal of claim 39, wherein said first data bus is an IEEE 1394 bus.

42. (New) The portal of claim 39, wherein said first data bus and said data interface constitute part of a loop-free network.

43. (New) The portal of claim 39, wherein said data interface is a bridge.

44. (New) The portal of claim 39, wherein said data interface is a wireless bridge.

45. (New) The portal of claim 39, wherein said data interface comprises a coaxial cable, a fiber optic cable or a radio connection.

46. (New) The portal of claim 39, wherein said uplink means is configured and adapted for discarding those data packets that are neither transmitted onto said data interface nor have a destination identifier that matches a destination identifier of said portal.

47. (New) The portal of claim 39, comprising:

storage means configured and adapted for storing one or more destination identifiers indicative of those destinations that can be reached via said data interface.

48. (New) A portal for interfacing a first data bus to a data interface, comprising:

uplink means configured and adapted for receiving data packets from said data bus, each of which data packets is associated with a respective one of a plurality of channels, determining, for each of said data packets, the channel with which it is respectively associated and transmitting only those of said received data packets onto said data interface that are associated with a channel that extends across said data interface.

49. (New) The portal of claim 48, wherein said data packets are isochronous data packets.

50. (New) The portal of claim 48, wherein said first data bus is an IEEE 1394 bus.

51. (New) The portal of claim 48, wherein said first data bus and said data interface constitute part of a loop-free network.

52. (New) The portal of claim 48, wherein said data interface is a bridge.

53. (New) The portal of claim 48, wherein said data interface is a wireless bridge.

54. (New) The portal of claim 48, wherein said data interface comprises a coaxial cable, a fiber optic cable or a radio connection.

55. (New) The portal of claim 48, wherein said uplink means is configured and adapted for discarding those data packets that are neither associated with a channel that extends across said data interface nor have a destination identifier that matches a destination identifier of said portal.

56. (New) The portal of claim 48, comprising:

storage means configured and adapted for storing information indicative of those channels of plurality of channels destinations that extend across said data interface.

57. (New) A portal for interfacing a first data bus to a data interface, comprising:

uplink means configured and adapted for receiving first data packets from said data bus and second data packets, each of which second data packets is associated with a respective one of a plurality of channels, determining a destination of each of said first data packets, determining, for each of said second data packets, the channel with which it is respectively associated and transmitting only those of said received first data packets onto said data interface that are destined for a node of a second data bus that can be reached via said data interface and

only those of said received second data packets onto said data interface that are associated with a channel that extends across said data interface.

58. (New) The portal of claim 57, wherein said first data packets are not respectively associated with a channel.

59. (New) The portal of claim 57, wherein said first data packets are asynchronous data packets.

60. (New) The portal of claim 57, wherein said second data packets are isochronous data packets.

61. (New) The portal of claim 57, wherein said first data bus is an IEEE 1394 bus.

62. (New) The portal of claim 57, wherein said first data bus and said data interface constitute part of a loop-free network..

63. (New) The portal of claim 57, wherein said data interface is a bridge.

64. (New) The portal of claim 57, wherein said data interface is a wireless bridge.

65. (New) The portal of claim 57, wherein said data interface comprises a coaxial cable, a fiber optic cable or a radio connection.

66. (New) The portal of claim 57, wherein said uplink means is configured and adapted for discarding those of said first data packets that are neither transmitted onto said data interface nor have a destination identifier that matches a destination identifier of said portal and for discarding those of said second data packets that are neither associated with a channel that extends across said data interface nor have a destination identifier that matches a destination identifier of said portal.

67. (New) The portal of claim 57, comprising:

storage means configured and adapted for storing one or more destination identifiers indicative of those destinations that can be reached via said data interface as well as for storing information indicative of those channels of said plurality of channels destinations that extend across said data interface.

68. (New) A method for interfacing a first data bus to a data interface via a portal, comprising the steps of:

receiving, at said portal, data packets from said data bus;

determining a destination of each of said data packets; and

transmitting only those of said received data packets onto said data interface that are destined for a node of a second data bus that can be reached via said data interface.

69. (New) The method of claim 68, wherein said data packets are asynchronous data packets.

70. (New) The method of claim 68, wherein said first data bus is an IEEE 1394 bus.

71. (New) The method of claim 68, wherein said first data bus and said data interface constitute part of a loop-free network.

72. (New) The method of claim 68, wherein said data interface is a bridge.

73. (New) The method of claim 68, wherein said data interface is a wireless bridge.

74. (New) The method of claim 68, wherein said data interface comprises a coaxial cable, a fiber optic cable or a radio connection.

75. (New) The method of claim 68, comprising the step of:

discarding those data packets that are neither transmitted onto said data interface nor have a destination identifier that matches a destination identifier of said portal.

76. (New) The method of claim 68, comprising the step of:

storing one or more destination identifiers indicative of those destinations that can be reached via said data interface.

77. (New) A method for interfacing a first data bus to a data interface via a portal, comprising the steps of:

receiving, at said portal, data packets from said data bus, each of which data packets is associated with a respective one of a plurality of channels;

determining, for each of said data packets, the channel with which it is respectively associated; and

transmitting only those of said received data packets onto said data interface that are associated with a channel that extends across said data interface.

78. (New) The method of claim 77, wherein said data packets are isochronous data packets.

79. (New) The method of claim 77, wherein said first data bus is an IEEE 1394 bus.

80. (New) The method of claim 77, wherein said first data bus and said data interface constitute part of a loop-free network.

81. (New) The method of claim 77, wherein said data interface is a bridge.

82. (New) The method of claim 77, wherein said data interface is a wireless bridge.

83. (New) The method of claim 77, wherein said data interface comprises a coaxial cable, a fiber optic cable or a radio connection.

84. (New) The method of claim 77, comprising the step of:

discarding those data packets that are neither associated with a channel that extends across said data interface nor have a destination identifier that matches a destination identifier of said portal.

85. (New) The method of claim 77, comprising the step of:

storing information indicative of those channels of plurality of channels destinations that extend across said data interface.

86. (New) A method for interfacing a first data bus to a data interface via a portal, comprising the steps of:

receiving, at said portal, first data packets from said data bus and second data packets from said data bus, each of which second data packets is associated with a respective one of a plurality of channels;

determining a destination of each of said first data packets;

determining, for each of said second data packets, the channel with which it is respectively associated; and

transmitting only those of said received first data packets onto said data interface that are destined for a node of a second data bus that can be reached via said data interface and only those of said second data packets onto said data interface that are associated with a channel that extends across said data interface.

87. (New) The method of claim 86, wherein said first data packets are not respectively associated with a channel.

88. (New) The method of claim 86, wherein said first data packets are asynchronous data packets.

89. (New) The method of claim 86, wherein said second data packets are isochronous data packets.

90. (New) The method of claim 86, wherein said first data bus is an IEEE 1394 bus.

91. (New) The method of claim 86, wherein said first data bus and said data interface constitute part of a loop-free network.

92. (New) The method of claim 86, wherein said data interface is a bridge.

93. (New) The method of claim 86, wherein said data interface is a wireless bridge.

94. (New) The method of claim 86, wherein said data interface comprises a coaxial cable, a fiber optic cable or a radio connection.

95. (New) The method of claim 86, comprising the steps of:

discarding those of said first data packets that are neither transmitted onto said data interface nor have a destination identifier that matches a destination identifier of said portal; and

discarding those of said second data packets that are neither associated with a channel that extends across said data interface nor have a destination identifier that matches a destination identifier of said portal.

96. (New) The method of claim 86, comprising the steps of:

storing one or more destination identifiers indicative of those destinations that can be reached via said data interface; and

storing information indicative of those channels of said plurality of channels destinations that extend across said data interface.